

CLAIMS

1. A PWM cycloconverter including an AC power source in which phases are connected directly to phases of the output side thereof by means of a bi-directional switch having self-arc-extinguishing capability, wherein an AC power source voltage is PWM-controlled in response to an output voltage command to output variable voltage having variable frequency,

the PWM cycloconverter comprising:

an input current detecting means for detecting one or more input current of the PWM cycloconverter; and

a PWM converter connected to a DC voltage means, wherein an output unit of the PWM converter is connected to a place before an input filter of the PWM cycloconverter to keep down resonance of the input filter on the basis of an input current signal detected by means of the input current detecting means.

2. The PWM cycloconverter according to Claim 1, further comprising:

one or more voltage clamping device provided with a diode rectifier connected to an input terminal of a semiconductor device for electric power of the PWM cycloconverter and with a smoothing capacitor; and

a voltage detecting device for detecting voltage at the both ends of the smoothing capacitor, wherein

the capacitor for clamping voltage is used for the DC voltage means.

3. The PWM cycloconverter according to Claim 1, further
5 comprising:

a snubber formed from a diode connected to an input terminal of a semiconductor device for electric power of the PWM cycloconverter and from a capacitor; and

a snubber voltage detecting device for detecting voltage
10 at the both ends of the smoothing capacitor connected to the snubber, wherein

the capacitor for the snubber is used for the DC voltage means.